REMARKS

Claims 1-4, 6-14, and 16-22 are pending in this application.

In the Final Office Action,[1] the Examiner rejected claims 1-4, 6-14, and 16-21 under 35 U.S.C. § 103(a) as being unpatentable over Eppler (U.S. Patent No. 6,084,989) in view of Schipper (U.S. Patent No. 5,815,118). Applicants respectfully traverse the rejection because the Examiner has not demonstrated a *prima facie* case of obviousness.

To establish a proper *prima facie* case of obviousness under 35 U.S.C. § 103(a), the Examiner must demonstrate each of three requirements. First, the reference or references, taken alone or combined, must teach or suggest each and every element recited in the claims. *See* M.P.E.P. § 2143.03 (8th ed. 2001). Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references in a manner resulting in the claimed invention. *See* M.P.E.P. § 2143.01 (8th ed. 2001). Third, a reasonable expectation of success must exist. *See* M.P.E.P. § 2143.02 (8th ed. 2001). Moreover, each of these requirements must be found in the prior art, not in applicant's disclosure. *See* M.P.E.P. § 2143 (8th ed. 2001).

Claim 1 recites a method including, among other steps, "creating a mathematical georeferencing function for assigning appropriate geographic coordinates to any one of the plurality of pixel locations." Eppler and Schipper, whether taken alone or in combination, do not disclose or suggest at least this step of claim 1.

[1] The Final Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Final Office Action.

The Examiner alleges that Eppler teaches

> in col. 1, lines 29-32 ... that parameters can be derived by fitting line and pixel image coordinates (i.e. x-y domain) of salient features, or landmarks, to their known latitude, longitude and the latitude-longitude (i.e. georeferencing domain), and height on the Earth. Also in col. 2 lines 19-23 [Eppler] teaches a list of coordinates for landmark boundary vertices ... of the corresponding landmarks stored in the database is processed through a mathematical model (Examiner's interpretation: it's similar to mathematical function) of the imaging system to generate absolute coordinates.
>
> See Final Office Action, pages 2-3.

Applicant disagrees. Col. 1, lines 29-32 of Eppler refer to determining orbit and attitude parameters by fitting line and pixel image coordinates of features to their *known* latitude and longitude, and height on the Earth. See col. 1, lines 24-32. Fitting coordinates to known latitude and longitudes, however, does not disclose or suggest "creating a mathematical *georeferencing function* for assigning appropriate geographic coordinates *to any one of the plurality of pixel locations*," as recited in claim 1.

Furthermore, the Examiner alleges that the processing performed by Eppler, according to the Examiner's interpretation, is *similar* to a mathematical function. See Final Office Action, page 3. Applicants disagree. The Examiner has not pointed to any teaching or suggestion in Eppler that constitutes "creating a mathematical *georeferencing function* for assigning appropriate geographic coordinates *to any one of the plurality of pixel locations*," as recited in claim 1. Instead, the Examiner cites to Eppler's mathematical model, which does not constitute a georefencing function. Further, Epper does not create a mathematical georeferencing function that assigns appropriate geographical coordinates to any one of the plurality of pixel locations.

Rather, the Eppler system provides an error correction technique that takes the difference between "known" and "predicted" locations of a pre-stored geographic feature and calculates "error coefficients" for later use on board a spacecraft to correct errors in its location prediction algorithm. See, for example, col. 2, lines 1-59. According to Eppler, "a digitized image [is] generated by a satellite-based imaging system and ... error values [are generated] indicative of the misregistration between the actual position of the landmarks in the digitized images and their desired position. The error values are then used to adjust the optical line of sight of the imaging system to produce optimum registration." See col. 1, line 66 to col. 2, line 5. To do so, Eppler "automatically determines line and pixel coordinates of landmarks in the digitized image with subpixel accuracy. The system and method use landmarks in symbolic form, and in particular, perimeters of lakes and islands, derived from precise cartographic source materials." See col. 2, lines 6-12. See also col. 4, lines 36-50, which discloses creation of landmark database 27 by using a list of names and center coordinates of more than 100 landmarks and storing the exact geodetic coordinates of points on the perimeter of each landmark.

In other words, the Eppler system processes two paired, georeferenced geographic features, namely, a vector surface feature and the same feature upsampled and extracted from the raster image. The location of the vector feature retrieved from the landmark database is considered to be a reference location. The geographic feature that has been "upsampled" and extracted from the satellite photo has an associated location, predicted by the mathematical model of the observation platform based on at least an assumed position and attitude of the platform and "aim" of a

camera. The Eppler system therefore uses the difference between an actual position of a geographic feature, as indicated by a polygon retrieved from the landmark database, and the predicted location of the corresponding feature from a satellite photo. A table of such errors or differences is used on board the satellite to correct the algorithm used to predict locations based on satellite position, and attitude, and camera aim.

In particular, as disclosed by Eppler, "[t]he matching algorithms generate row and column offset error values indicative of the offset between the actual position of the landmark and the desired position of the landmark in the image (**defined by the landmark geodetic coordinates stored in the database**)" (emphasis added). See col. 2, lines 32-37. Accordingly, Eppler does not disclose or suggest a general annotation function. If an object does not exist in the database, it cannot be shown. By contrast, the present invention assigns geographic coordinates to any one of the plurality of pixel locations. Eppler therefore fails to disclose or suggest "creating a mathematical *georeferencing function* for assigning appropriate geographic coordinates *to any one of the plurality of pixel locations*," as recited in claim 1.

Moreover, since Eppler does not teach or suggest creating a mathematical georeferencing function, it also does not disclose or suggest "revising the mathematical georeferencing function when a new point pair is received," as recited in claim 1. For at least the foregoing reasons, Eppler does not teach or suggest all of the steps recited in claim 1.

Schipper also does not correct these deficiencies of Eppler. The Examiner has cited Schipper, alleging that "in the abstract [Schipper] teaches first and second maps." See Final Office Action, page 7. Even assuming this allegation is correct, Schipper

does not disclose or suggest "creating a mathematical georeferencing function for assigning appropriate geographic coordinates to any one of the plurality of pixel locations," as recited in claim 1.

The Examiner also alleges in the Response to Arguments section that Schipper, in col. 14, lines 8-12, "teaches the b-coefficients b11, b12, b21, and b22 (see equation 95) will change as soon as one or more of the locations of the landmarks L1 and/or L2 changes." See Final Office Action, page 3. The Examiner makes this allegation in connection with the step of claim 1 that recites "revising the mathematical georeferencing function when a new point pair is received." Applicants disagree that Schipper teaches or suggests such a step. Instead, Schipper uses landmarks and other monuments contained in an old map to determine a user's location relation to the landmarks on the old map. See col. 5, lines 10-20. The teaching pointed to by the Examiner discloses updating coefficients when the location of a landmark changes. However, this teaching does not constitute or suggest "revising the mathematical *georeferencing function* when *a new point pair is received,*" as recited in claim 1 (emphasis added). Accordingly, Eppler and Schipper, whether taken alone or in combination, do not disclose or suggest all of the elements of claim 1. Therefore, the Examiner has not established a *prima facie* case of obviousness with respect to claim 1. Applicants request the withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a).

Claims 2-4, 6-13, 21, and 22 depend from allowable claim 1. Applicants therefore also request the withdrawal of the rejection of claims 2-4, 6-13, 21, and 22 under 35 U.S.C. 103(a).

Independent claims 14 and 19 contain similar recitations to claim 1 and were rejected on the same grounds. Applicants request the reconsideration and withdrawal the rejection of claims 14 and 19 for at least the reasons given above with respect to claim 1. Claims 16-18 and 20 depend from claims 14 and 19, and therefore, Applicants also request the withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

CONCLUSION

Applicants respectfully request that the Examiner consider this response under 37 C.F.R. § 1.116, placing the pending claims in condition for allowance. In view of the foregoing remarks, Applicants request the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: September 16, 2005

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